REMARKS/ARGUMENTS

The foregoing amendment is presented to more particularly point out and distinctly claim the method described in the above-identified application and for expediting prosecution.

Status Of Claims

The claims in the case are: 1 and 9-17.

Claims 9 to 17 are based on original Claims 1 to 8 and 10, respectively. Original Claim 1 is temporarily retained and will be deleted later.

Summary Of The Invention

The present invention relates in general to electrophotosensitive materials which are used in photocopying machines, for example. Various methods have been developed in the past to improve electrophotosensitive materials. The present application explains on page 2 that if an intermediate layer is absent, the charge generated on the bottom of the photosensitive layer is removed when the photosensitive layer is subjected to exposure to light and the resulting image will tend to appear foggy. Other problems also mentioned are insufficient adhesion and unwanted black dots formed on the image. Hence the prior art has sought to develop intermediate layers to prevent the migration of a charge, as well as other improvements. Thermoplastic resins were not selected for that purpose after it was determined that the intermediate layer can be dissolved and deteriorated and, therefore, the prior art has moved toward the use of thermosetting resins as the binder resin for the intermediate layer. However, if the heat treatment to cure the thermosetting binder resin is not sufficiently carried out, the degree of curing of the thermosetting resin is inadequate which leads to further problems.

It has been discovered by the applicants that the technical problems which have been experienced in the prior art can be avoided, and at the same time a good image can be formed which has a low residual potential as compared with the prior art and which is free from fog.

Applicant has determined that the water contact angle is a factor which has a correlation with the curing degree of the thermosetting resin and is easy to measure. It has been found that the residual potential decreases with an increase in the water contact angle while a change in the residual potential nearly disappears when the water contact angle exceeds a certain value.

It has been determined that an improvement can be obtained when the water contact angle of the surface of the intermediate layer is not less than a value (A°) represented by the formula: $A° = B° - 2°$ in which B° is a water contact angle corresponding to an intersection of a first approximation linear line and a second approximate linear line in a correlation curve between a residual potential of the photosensitive mater on the intermediate layer.

The method aspect of the present invention comprises forming an intermediate layer containing a thermosetting resin on a supporting substrate, measuring the water contact angle of the surface of the intermediate layer and forming a photosensitive layer on the intermediate layer when the water contact angle is within a predetermined range. In the second aspect of the invention, the intermediate layer containing a thermosetting resin is formed on a supporting substrate and a heat treatment is carried out so that a water contact angle is set within a predetermined range. The photosensitive layer is then formed on the intermediate layer when the water contact angle is within a predetermined range.

The present invention is further described on page 11, wherein it is pointed out that the correlation between the residual potential of the photosensitive material and the water contact angle of the intermediate layer is previously determined. To determine its correlation, intermediate layers having different curing degrees are formed by varying heat treatment conditions of the thermosetting resin to be selected for the purpose. After measuring the water contact angle, a photosensitive layer is formed on each of the intermediate layers under the same conditions.

Reference is made to Figure 1 which shows the correlation between the residual potential and the contact angle. With an increase in contact angle, a specific value of the contact angle such as point B, which is 62.9° in Figure 1, as a border generally divides the first correlation portion where the residual potential decreases proportionately, from the second portion where a change in the residual potential nearly disappears even if the contact angle increases.

Then a first approximate linear line which approximates the first correlation portion and a second approximate linear line which approximates the second correlation portion are made as shown in Figure 1. The first approximate linear line is made by approximation of measured values of the residual potential and the water contact angle in the first correlation proportion using a least-square method.

The second approximate linear line is made by approximation of measured guidance in a second correlation portion in the same manner as the first approximate linear line. Then a correlation curve is made by combining the first approximate linear line with the second approximate linear line.

Page 12, beginning at line 5, explains how the range for the water contact angle can be determined from the correlation curve. In the example shown, the range is from 63.9° to 69.9°. When the contact angle is smaller than the value corresponding to the intersection –2, image fog is likely to occur.

Hence, the present invention provides a method for determining the surface of the intermediate layer with the appropriate characteristics whereby problems which have been associated with such electrophotosensitive materials in the past can be avoided.

The Prior Art Does Not Disclose Measuring The Water Contact Angle

The prior art cited in the parent case does not in any way describe, teach, suggest or motivate a person skilled in the art to determine the water contact angle of the intermediate layer to determine appropriate characteristics for intermediate layers. The *Nagasaka* reference (U.S. 6,335,133) is concerned with the problems in the prior art relating to hygroscopicity (see col. 1, lines 48-50). Also, the reference is concerned with poor viscoelasticity causing cracks and pores which were problems in the prior art which the reference addresses. See col. 2, lines 7-12. Thus, the *Nagasaka* reference is concerned with producing an electrophotographic photosensitive material which shows little change in resistivity under environmental changes and overcomes the problems that have arisen in the past as discussed in that reference. The solution proposed by *Nagasaka* is to form an intermediate layer by applying a coating liquid containing a monomer or oligomer of a thermosetting resin and an organo metallic compound. See, col. 3, lines 10-15. The theory proposed by *Nagasaka* as to the functioning of his invention is expressed in col. 5, beginning at line 40, has nothing at all to do with determining the water

contact angle and determining the proper characteristics of the intermediate layer based on a range of water contact angles.

For reasons set forth above, applicant requests favorable action at the Examiner's earliest convenience.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By:_____
Robert G. Weilacher, Reg. No. 20,531

Suite 3100, Promenade II
1230 Peachtree Street, N.E.
Atlanta, Georgia 30309-3592
Telephone: (404) 815-3593
Facsimile: (404) 685-6893

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